

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Petition of Entergy Nuclear Vermont Yankee, LLC, and Entergy)	
Nuclear Operations, Inc., for amendment of their Certificates of)	
Public Good and other approvals required under 10 V.S.A. §§)	August 7, 2009
6501-6504 and 30 V.S.A. §§ 231(a), 248 & 254, for authority to)	Docket No. 7440
continue after March 21, 2012, operation of the Vermont Yankee)	
Nuclear Power Station, including the storage of spent-nuclear fuel)	

NEW ENGLAND COALITION’S REPLY BRIEF

NOW COMES The New England Coalition, Inc. (“NEC”), by and through its attorney, Jared M. Margolis, and hereby submits the following Reply Brief in the above-captioned proceeding.

1. Introduction

In its Initial Brief, NEC set forth factual findings and analysis demonstrating that the Petitioner (herein referred to as ENVY) has not met its burden to show that continued operation of the Vermont Yankee nuclear power plant will provide tangible economic benefits to Vermont; that they have failed to show that continued operation will not have an undue adverse impact on air, water, wetlands, educational or transportation resources; that they have failed to show that there will be adequate funds for decommissioning; and they have failed to demonstrate that they can operate the plant reliably through the relicensing period.

Nothing contained in any of the other parties’ Briefs merits the Board’s support of relicensing Vermont Yankee (VY), and NEC stands by the conclusions reached in its Initial Brief. NEC offers the following responses to certain specific issues raised in other parties’ Briefs.

2. The CVPS and GMP Briefs

a. The Board Should Not Issue An Interim Decision

The Vermont Legislature has made it clear that the Board is not to issue a decision in this matter until after the Legislature has made a final determination on whether the relicensing of VY is in Vermont's best interests. 30 V.S.A. § 248(e)(2). CVPS and GMP have requested that the Board issue an interim decision in this matter, so that the Vermont utilities may make "resource decisions." CVPS Brief at 4. They further argue that an interim decision will influence the Legislature, stating that "a favorable Interim Decision could influence a Legislative outcome and would make it more likely that Vermont Yankee may be relicensed." *Id.* This is exactly why an interim decision is not warranted.

The Vermont Legislature specifically stated that no decision by this Board is to be made until after the Legislature has made their pronouncement. This indicates that the Legislature intended to consider the matter of relicensing without being influenced by the Board's decision. It is completely unclear why CVPS as well as GMP think that they are in a position to argue that the Legislature should be influenced by the Board's decision, or that the Legislature would benefit from an interim decision. *See* GMP Brief at 4 (stating that the Board as an Administrative Agency, has the ability to issue advisory opinions and policy guidance). If the Legislature would like the Board's opinion (or an interim decision), they would have stated so in the statute, or else they will ask for it as they proceed with considering the matter of continued operation of VY. The Legislature has spoken clearly on this issue, creating legislation specific to this particular matter. In light of § 248(e)(2), the Board must not issue an interim decision in this matter.

In support of their claim that the Board has the authority to issue an interim decision, GMP cites several examples of cases where the Board issued a Conclusion section or identified conditions the Board would impose on a CPG prior to issuing a final determination. GMP Brief at 2-3. These examples, however, do not show any instance in which the Board issued an interim decision where the Legislature had specifically stated that the Board may not issue a decision until after the Legislature does. This is a very different situation than any previous cases before this Board. The Vermont Legislature has created statutory language specific to the relicensing of VY, which unambiguously states that the Board shall not issue a decision until after the Legislature. Simply put, if the Legislature wants policy guidance from the Board, they will ask for it, and it is not for the parties or the Board to make that decision for them.

Furthermore, the Board is not in a position to issue an interim decision other than to state that the Petitioner has not met their burden in this matter. As is discussed in NEC's Initial Brief, ENVY has failed to provide adequate information on several components of § 248, including: impacts on water, wetlands, transportation, and education; aging management issues related to reliability; and reliable estimates regarding decommissioning costs and the economic effects of plant closure. Nothing in ENVY's Brief resolves these failures to provide adequate information to meet their burden. This makes it impossible for the board to fully consider all of the risks, costs and benefits of continued operation. Therefore it would be imprudent for the Board to issue an interim decision, other than to state that the Petitioner must perform several studies and

reports (as outlined in NEC's Initial Brief)¹ so that the Board may have all of the relevant information necessary to render a decision.²

NEC believes that if CVPS and GMP would like the Board to issue a decision regarding whether it is possible for the Petitioner to meet the economic benefit test of § 248(b)(4) absent a PPA, then they should request a ruling from the Board on that specific and narrow issue. At this time, however, it would be contrary to the Legislatures clear intent, as well as completely premature, for the Board to issue an interim decision.

b. Reliability

NEC is pleased that both CVPS and GMP recognize the importance of plant reliability, and have confirmed NEC's argument that the Board must be fully convinced that the VY Station can be operated reliably in order to allow extended operation. CVPS specifically stated that "unless the Board is satisfied that the plant can operate safely, and with reasonable reliability, over the license extension term, Envy's proposal should be rejected." CVPS Brief at 7. They add that "no other attributes or benefits from license extension outweigh this burden." *Id.* NEC believes that this burden has not been met (see discussion below and in NEC's Initial Brief), and therefore the Board must not issue a CPG to the Petitioner.

¹ These include a study on the impacts of cooling tower drift on wetlands and waters in the area surrounding VY; a comparative economic study on the closure of other nuclear power plants in NE, and the effects on the local and state economy; an updated decommissioning cost analysis, which accounts for more recent estimates for SNF removal and other changes (such as no rubbleization); and a comparative study on actual decommissioning costs at other nuclear power plants.

² CVPS even states that they are certain that they will have enough power to serve their customers even without VY in operation. CVPS Brief Finding 6. This indicates that the Board should not make a forced interim decision based solely on cost implications, and must not give short shrift to other issues, such as reliability and Petitioner's failure to meet their burden on wetlands, air, water, transportation, and education.

3. The DPS Brief

a. Reliability

The Department has set forth a concise list of the various calamities at VY over the past several years, and the significant issues facing ENVY for continued operation of the VY station. *See* DPS Findings 13-24. These findings provide only a snapshot of the potential concerns regarding reliability (NEC believes these may be the tip of the iceberg), however even if the Board finds that only these issues identified by DPS (through the NSA report) need to be resolved, the enormity and pervasive nature of these problems indicates that ENVY's ability to operate the plant reliably for an additional twenty years is unlikely.

How can the Board look at this overwhelming list of problems with plant procedures, human performance, system and technical areas, and other shortcomings and find that another twenty years of this type of management of a nuclear power plant in our state is in Vermont's best interests? Even GMP and CVPS state that reliability must be the Board's first and foremost concern (see above), and there is no doubt that absent reliable operation of VY, the benefits of extended operation are "questionable at best." DPS Finding 42.

If the Board does decide that on balance it is in Vermont's best interests to relicense VY, there must be some assurance that it will be operated reliably. In order for the Board to be even remotely confident that VY can be operated reliably, at a minimum the recommendations of the NSA team must be fully implemented.³ NEC agrees with DPS that third party oversight is

³ NEC believes that even this may not be enough. *See* NEC Initial Brief at 51-55. ENVY has shown that regardless of several Component Design Basis Inspections conducted by NRC (see below), as well as their own internal Corrective Action Program and Inspections, the plant is

needed to ensure that ENVY does in fact implement the recommendations of the NSA team, and furthermore that ENVY must submit compliance filings to the Board and the other parties. It is essential that the parties have an opportunity to review these compliance filings, and to comment to the Board and request hearings on specific issues if it appears that ENVY is not fully implementing the NSA recommendations. *See* DPS Finding 41.

NEC, however, does not believe that ENVY management will be able to operate VY reliably for an additional twenty years, even if they fully implement the NSA recommendations. The Department asserts that the CRA is comprehensive, and therefore no additional systems need to be vertically assessed to assure reliability. DPS Finding 31. NEC disagrees with this finding. As is discussed in NEC's Initial Brief (and below in response to ENVY's Brief), the DPS panel made it clear that the NSA recommendations do not contain everything necessary to ensure reliable operations:

Q. (Mr. Margolis) Then I guess my question is does the NSA report -- do the NSA report recommendations contain everything that actually needs to be done for reliable operation into the extended period?

A. (Mr. Woysner) It would not be comprehensive.

Tr. 5/28/09 at 163-164 (Woysner). The reason the NSA report is not fully comprehensive is that only 6 of the 69 plant systems underwent a vertical assessment. Additionally, the NSA team did not review aging management programs. Tr. 5/28/09 at 183-184 (DPS Panel). Aging management consist of 39 programs, 13 of which, according to ENVY, are in place but require enhancement, and 9 of which are not yet in place at all. *See* NEC Initial Brief Finding 90. It is specious to claim that a report analyzing reliable operations of a nuclear power plant beyond its

susceptible to several system failures (i.e. cooling tower collapse events) as well as maintaining procedures that are below industry standards.

original license period is comprehensive where it does not address such a crucial issue as aging management. This remains an area of reliability that neither the Department nor the Petitioner has presented any evidence on, and therefore it cannot be said that the Board has been provided adequate and comprehensive information regarding reliability. There simply remain too many questions regarding reliability for the Board to be assured that VY will not experience the same managerial, inspection and system failures that have occurred under ENVY's tenure at VY.

b. SNF Management and Decommissioning Costs

The Department has stated that "it is imperative that Petitioners revisit and re-evaluate its SNF management plan regularly and with various contingencies explored." DPS Brief at 24. This is due to the fact that SNF management is the biggest driver for decommissioning costs, and recent changes in DOE policy have altered the landscape regarding estimated timelines for removal of SNF from the VY site. Cloutier Mar. 23 Rebuttal Pf. at 8. According to DPS, "contingency plans could entail on-site storage for as long as one-hundred years." DPS Brief at 24.

NEC agrees that the spent fuel management plan must be re-evaluated regularly to account for such changes, however it is imperative that the Board have a current and accurate (as possible) SNF plan and cost estimate in order to consider the full implications of relicensing, and to conduct a realistic cost/benefit analysis. It is troubling that the TLG cost estimate has not incorporated the most current understanding of potential SNF management timeframes. NEC therefore agrees with DPS that the SNF management plan needs to be revisited, however this needs to be done now, prior to the Board issuing a decision in this matter.

This holds true for the overall decommissioning cost estimate as well, which is driven to a large degree by SNF management costs. Cloutier Mar. 23 Rebuttal Pf. at 8. The Department

has set forth additional conditions that they feel should be imposed, including that the site should be remediated to the 10 millirem standard. The Department has set forth a condition on page 65 of their Brief calling for certain changes to be made to the decommissioning cost estimate for the next update, which will take place after the Board has rendered a decision in this matter. NEC agrees with this condition, however it is crucial that the Board have sufficient information regarding decommissioning costs to make an informed decision regarding relicensing. Therefore NEC believes that this condition should be met now, and the Board should require an updated cost estimate prior to making any decision on a CPG.

c. Value Of The Revenue Sharing Agreement

NEC disagrees with DPS Finding 109, which states that the “extreme low case” estimate for the potential economic benefit from the RSA is \$159.0 million. As DPS goes on to state in Finding 114, there is the potential for the value of the RSA to be “quite small and conceivably zero,” which would better represent the possible “extreme low case” for RSA benefits. This requires that the Board find that the benefits of the RSA are indefinite and potentially insignificant, and therefore cannot be relied on as a basis for meeting the Petitioner’s burden pursuant to § 248(b)(4).

ENVY has likewise claimed that the RSA will provide an economic benefit to Vermont ratepayers, and states that the value of the RSC “will range from at least \$126,915,000 to \$381,122,000.” ENVY Brief at 18. This also ignores the very real possibility that there will be no economic benefit from the RSA, as stated above. ENVY witness Mr. Wiggett testified that if market rates remain below the Strike Price, or should Entergy sell electricity below the Strike Price regardless of market prices, then there would be no benefit under the RSA. Tr. 5/20/09 at 15, 20-21 (Wiggett). The Board should therefore not accept that there is some guaranteed

minimum value for the RSA, but rather must consider the real possibility that there will be no value to Vermont from the RSA.

4. Entergy's Brief

a. Introduction

As the Petitioner, ENVY retains the burden to establish that the continued operation of VY will comply with the criteria set forth in § 248. ENVY's Brief indicates that they have not met this burden. They have failed to establish that the potential benefits of continued operation outweigh the many risks and costs of another twenty years of nuclear power and SNF generation in VT. Furthermore, they have plainly not met their burden regarding the environmental criteria in § 248(b)(5), and have failed to provide sufficient assurances that the plant will be operated reliably. These failures require denial of their request for a CPG.

Additionally, ENVY seems to think it can pressure the Board into relicensing VY, regardless of the risks. They state: "it would be risky to condition a CPG... on additional public benefits because, as the record evidence shows, 'Vermonters have a lot to lose if VY does not continue to operate.'" ENVY Brief at 3. The Board should not bow to this obvious threat issued by ENVY, but rather the Board must undertake a full analysis of all the costs and benefits of relicensing, which clearly indicate that continued operation is not in Vermont's best interests.

Notably, ENVY begins their Brief by pointing to the concerns of Vermont as a community. They state that "as a community, Vermont has demonstrated that it *is* concerned about constraining carbon emission." ENVY Brief at 1. As discussed further below, NEC believes that ENVY is trying to obscure the real issues of relicensing by focusing on greenhouse gas emissions; however their selective reliance on the opinion of the Vermont community is remarkable. The overwhelmingly negative perception of ENVY and the operation of the VY

Station is evident from the concerns stated in the public hearings held in this matter, and as DPS witness Mr. Lamont testified, “There is a growing perception among the public that the current operators of the plant are incompetent.” Tr. 6/3/09 at 52 (Lamont). The Vermont community is not calling for VY to be relicensed to constrain carbon emissions, as ENVY asserts; rather Vermonters are concerned that the plant will continue to have problems, will not be operated reliably, and will cost Vermonters millions of dollars due to decommissioning fund shortfalls. The Vermont community does not trust ENVY, and does not want twenty more years of Vermont Yankee.

b. Greenhouse Gas Emissions

ENVY makes a brazen attempt to obscure the true issues that this Board must consider in deciding whether or not to allow twenty more years of nuclear power generation and extended SNF storage in VT. On page 8 of their Brief, they claim that the issue of green house gas emissions is “the critical question faced by the Board in this docket....” This is an absurd argument intended to distract the Board from the truly important matters that ENVY would like to ignore; plant reliability, the dangers and costs of SNF management, decommissioning fund shortfalls, and potential adverse affects on air, water, wetlands and government resources.

It is fallacy for ENVY to posit that by not relicensing VY, our community is saying that our contribution to GHG emissions is so small that we should not be concerned about it. ENVY Brief at 5. In fact, the opposite is true – by not relicensing VY, VT can move away from reliance on an aging and outdated power supply, and focus on the future of energy production. This will include other forms of non-carbon emitting sources, such as wind, hydro, geothermal or other renewable sources.

ENVY urges the Board to “think globally” about this issue, and attempts to invoke the general environmental consensus that global warming will lead to catastrophe. *Id.* However they are taking this argument way too far. They want to focus on what happens “if the nation’s nuclear fleet were replaced by fossil-fueled generation” *Id.* at 6. But this is not the issue before the Board. Rather, this is about one aging and unreliable plant that provides only 1.85% of the energy in the ISO-NE grid. Tr. 5/18/09 at 33 (Lester). It can and will easily be replaced over time with renewable generation resources, and by not relicensing VY the Board may help to instigate the development of renewable generation facilities in VT and the region. Albert Apr. 24 Pf. Reb at 2. GHG reduction is an important issue, but it is not the central issue this Board must consider, and it is an entirely inadequate basis on which to issue a CPG. *See In re: Entergy Nuclear Vermont Yankee, LLC*, Docket No. 6812, Order of 3/15/2004 at 33 (stating that issues of global warming are not an appropriate basis to demonstrate an economic benefit to the state and its residents under Section 248(b)(4)).

c. Alternative Resources

ENVY claims that the evidence in this case shows that renewable resources will not be available in time to replace VY. ENVY Brief at 10. It is not clear, however, why the Board should find that there needs to be immediate replacement by 2012 to warrant denial of the permit. The record indicates that the new imports scenario set forth by Mr. Albert would be the most likely short-term replacement, which includes a combo of hydro, nuclear, wind and fossil-

fuel generation;⁴ however a fully renewable portfolio could be implemented in the near future.

Albert Apr. 24 Pf. Reb at 2.

Furthermore, NEC takes issue with ENVY's interpretation of Mr. Albert's testimony. They claim "Mr. Albert [] conceded repeatedly that it would be 'very unlikely' that Vermont could develop renewable resources to replace its entire share of the VY station." ENVY Brief at 12. This misconstrues Mr. Albert's testimony, wherein he stated that "I do feel that information and sources cited in my testimony and attached report support the claim that given a favorable political, economic, and regulatory climate, it is conceivable that at some point between now and 2032, this quantity of power could be generated from a portfolio of renewable power resources...." Albert Apr. 24 Pf. at 2. He further stated that there are indications that there is such a favorable climate now. Tr. 5/27/09 at 12-15 (Albert). ENVY's attempt to mischaracterize Mr. Albert's testimony should be disregarded.

ENVY has also not met their burden to show that the electricity purchased by VT utilities from VY cannot be replaced by renewable energy generation resources in the region. ENVY has relied solely on information (from DPS as well as their own expert) regarding the potential for renewable electricity generation within VT, and has provided no indication regarding the potential for wind, hydro or geothermal resources located outside of Vermont to supplant the

⁴ Notice that ENVY states that a "substantial majority" of the power supply mix in the NE and NY markets is from fossil fuel generation, ENVY Brief at 13, yet they cite in footnote 59 that fossil fuel generation represents only 40% of energy and capacity in NE. It is unclear how ENVY believes that 40% is a "substantial majority".

electricity purchased from VY.⁵ See ENVY Findings 132-174 (discussing the possibility of renewable generation only in VT).

Large-scale projects in Maine, New Hampshire and New York may provide a means for VT utilities to purchase renewable electricity to replace VY much sooner than ENVY has estimated, and the failure of ENVY (and DPS) to provide information on any regional sources of renewable energy indicates that they have not met their burden in this case.⁶

The fact is that if VY is not relicensed, there will be an increased market for electricity generation in VT and the region, providing an incentive for renewable generation facilities to be built. This will mean more renewable generation resources that VT can rely on into the future, without the “unique risks” of a nuclear facility. It is time to begin building the future of Vermont’s energy supply now, and continuing to rely on an aging nuclear power plant is simply not in Vermont’s best interests.

d. Economic Benefits

ENVY claims that the economic benefits from continued operation of VY are immense, even without the RSC or a PPA. ENVY Brief at 14. The economic benefits of VY, however,

⁵ According to the U.S. Energy Information Administration (EIA), the contribution of renewables to the US Energy mix exceeded that of nuclear in April of this year. See U.S.E.I.A. Monthly Energy Review, Tables 1.1, 1.2, and 10.1 (July 28, 2009), available at: <http://www.eia.doe.gov/emeu/mer/contents.html> (showing total U.S. energy production at 5.980 quads with .664 quads (11.1%) coming from renewable sources, and .620 quads (10.4%) coming from nuclear power).

⁶ For example, the U.S. Department of Energy reports that Maine has 235.5 megawatts of windpower operating or under construction, and an additional 1005.5 megawatts of windpower sited and under development with several more projects planned or at the permitting stage. U.S. Department of Energy, Energy Efficiency and Renewable Energy – Maine Wind Activities (Operating and Planned Wind Projects), *available at* http://www.windpoweringamerica.gov/ne_astate_template.asp?stateab=me#projects (last reviewed August 5, 2009).

must not be looked at in isolation, but must be appropriate to offset the costs and risks of continued operation of a nuclear power plant. As Mr. Lamont indicated, the operation of a nuclear power plant and the storage of SNF in our state creates unique risks, which the Board must balance with the benefits ENVY espouses. Lamont Apr. 24 Pf. at 5. The employment, tax and ancillary spending created by VY are simply not enough to meet the requirements of § 248(b)(4).

Additionally, the benefits relied on by ENVY (absent a PPA or value from the RSA) would not provide benefits for Vermont ratepayers, but rather are general benefits that any large business would provide. If the only benefits from continued operation are jobs and taxes, then it is time to rid ourselves of this unreliable nuclear power station, decommission the site, and get another business onto the site which can provide similar tax and employment benefits without the unique risks of VY. These same economic benefits could be realized without the potential for spent fuel pool fires, radiological contamination, or hosting a terrorist target in our state, and without necessitating SNF storage, or causing the intergenerational environmental hazards posed by VY. The benefits claimed by ENVY are simply not enough to warrant relicensing, and the Board must therefore deny a CPG.

ENVY's analysis of the economic consequences of shutting down VY is based solely on unsupported models that do not take into account any real world case studies. As is discussed in further detail in NEC's Initial Brief (at pp. 8-10), the Petitioner's failure to provide any analysis or comparison to real world examples regarding the economic consequences of plant closure, such as the experience in Maine or Connecticut, renders their analysis incomplete and potentially misleading. ENVY witness Mr. Heaps has not himself conducted an economic impact analysis

for the shutdown of any other similar facility, and admitted to not having consulted any other studies, or even being unaware of any such studies. Tr. 5/19/09 at 161-162 (Heaps).

NEC disagrees with ENVY Finding 189 – the ReDyn model used in the Heaps Report was not shown to be reliable. The only example Mr. Heaps was able to provide regarding projects of this scale was an assessment of the potential closure of IBM; however IBM did not close, so the analysis was purely hypothetical, and the accuracy of the model could not be verified or even assessed. Tr. 5/19/09 at 163-164. The Petitioner has not explained why the Board should rely on an economic model that does not account for any real world experience, and therefore has not met its burden to provide adequate information to the Board, and their petition must be denied.

e. Reliability

The Petitioner has argued that they have operated the plant reliably, and can continue to do so for an additional twenty years. ENVY Brief at 28. They would further like the Board to conclude that ENVY will be able to address all of the issues identified by the NSA team, and therefore will resolve any and all outstanding issues regarding reliability. *Id.* at 36-38. The Petitioner further propounds that the Board should be satisfied with NRC oversight regarding aging management programs. *Id.* at 33-35. The reality is that the plant has experienced several disastrous incidents in recent years, and the NSA team's findings indicate numerous failures regarding practices and procedures that affect the entire plant. Furthermore, there is no reason to believe that ENVY has the ability to effectively remedy these shortcomings, and little reason to

rely on NRC oversight regarding the vital issues of aging management. The Petitioner has clearly not met their burden regarding reliability, and the Board cannot issue a CPG.⁷

ENVY would like the Board to accept the premise that capacity factor in and of itself may be substituted for proof of reliable operations at VY, and continually avow that the 93% capacity factor for the plant indicates that it is operated reliably. ENVY Brief at 29-30, 91. Capacity factor is a facet of reliability, but prior capacity factor does not prove anything about reliability into the future, and the Board should not assume that this same capacity factor may be achieved as plant components are pushed past their useful life. No commercial nuclear power plant has ever operated for more than 40 years, and the effects of aging on plant components are not fully known, and aging management concerns have not been fully analyzed by the NSA team. Tr. 5/28/09 at 183-184 (DPS Panel) (see discussion below).

Furthermore capacity factor itself does not indicate reliability, and in fact when looked at in conjunction with other reliability indicators, VY's past capacity factor is actually quite troubling. When ENVY adopted the Equipment Reliability Index in 2008, it ranked in the bottom quartile for all nuclear power plants operating in the US. Tr. 5/26/09 at 111 (Colomb). This indicates that there were several shortcomings regarding equipment reliability at VY, and the results of these failures have been several disturbing events, such as cooling tower collapses and the transformer fire. Yet the high capacity factor over this time period indicates that the

⁷ NEC further disagrees with ENVY Finding 3, which states that inspection and monitoring activities at VY have been effective in ensuring reliability. Inspection activities have not been effective in ensuring plant reliability, and Mr. Thayer testified that one of the contributing factors to the cooling tower collapse event was a less-than-perfect inspection program. Thayer Mar. 3 Pf. at 13.

management at ENVY kept pushing the plant to operate, even when serious equipment reliability issues existed.

For example, the 2008 replacement of the wood structural members with FRP in the cooling towers was done under the ‘work-at-risk’ process, wherein design and installation work proceeded in parallel. Tr. 5/26/09 at 50 (Colomb). This was due to the fact that there was only a “short time frame to complete inspections.” Ex. DPS-Panel-2 at 4. The work was therefore done while the plant was in operation, rather than ENVY providing enough time during the outage to resolve the problem. NSA further found that that this project was too complicated to be done as a work-at-risk project. *Id.* Perhaps if ENVY were more concerned about plant reliability they would have taken the time to conduct more thorough inspections (necessitating longer outages), which may have prevented these events from occurring; however it appears that pushing the plant to run at a high capacity factor is more important to ENVY than long-term plant reliability.

ENVY further claims that the reliability of the plant is assured through comprehensive audits and inspections that indicate the plant is reliably operated. ENVY Brief at 31. They point to several NRC conducted Component Design Basis Inspections (CDBI), including one performed in 2004 that included a detailed engineering inspection, which found no significant engineering problems at VY.⁸ *Id.* ENVY’s argument, however, defies logic and the Board should not rely on these inspections as a basis for finding ENVY reliable.

While the Board may have found at the time the 2004 CDBI was completed that NRC’s review was “detailed and extensive,” *Id.*, the subsequent events with the cooling tower,

⁸ It is also notable that ENVY has not put these CDBI Reports into the record in this matter, yet is relying on them here to argue that the plant can be operated reliably into the extended license period. The Board should put little weight into these claims, as this is the first instance that these reports have been mentioned in these proceedings.

transformer, and ongoing leak issues with the condenser and demineralizers, as well as the findings of the NSA Team and Public Oversight Panel, indicate that the NRC's findings were erroneous, and that significant engineering, system, component and managerial issues exist at VY. So why should we put any faith into these inspections, or ENVY internal inspections for that matter, which failed to prevent or remedy these problems?

ENVY relies primarily on the CRA conducted by NSA to argue that the VY Station can be operated reliably for an additional twenty years. They claim that the scope of the CRA was comprehensive, however even the DPS panel admitted that the NSA report recommendations do not represent a comprehensive list of everything that needs to be done by ENVY to ensure reliable operation of the facility into the extended license period. Tr. 5/28/09 at 163-164 (DPS Panel). In fact, Entergy witness Colomb stated that many of the problems that NSA identified were items that Entergy had previously identified through their own internal processes, which indicates that there may be other such issues identified by ENVY, but not reviewed by NSA. Tr. 5/26/09 at 134-135. Entergy, however, was unwilling to share with the Board exactly what other problems they have identified through their own internal processes, or to create a matrix so that the State may track those matters along with the subset identified by NSA. *Id.*

Furthermore, the fact that "five of NSA's six principal conclusions relate not to specific systems but to cross-cutting procedures and practices that affect the entire plant," does not prove that the CRA was comprehensive, as ENVY asserts; rather it is further evidence that the plant may not be operated reliably into the future. ENVY Brief at 32. While NEC agrees that this suggests that the NSA team did look at several cross-cutting indicators of reliability, it in no way proves that they were able to provide a fully comprehensive assessment of every aspect of the plant. More importantly, the fact that so many shortcomings were found that relate to practices

and procedures that affect the entire plant indicates that there is a systemic failure at VY to operate to industry standards, and that the enormity of the problems at VY are beyond the ability of ENVY to remedy.

The most significant shortcoming of the NSA report is its failure to address aging management concerns. ENVY claims that their commitment to the NRC to implement comprehensive aging management programs provides a basis for finding that the plant will be operated reliably into the future. ENVY Brief at 33-35. They also claim that “NSA reviewed these commitments during the CRA,” *Id.* at 34, however the NSA team did not evaluate the aging management program at VY, but rather relied only on information supplied by ENVY in commenting on aging management. As Mr. Woyshner explained:

So we quoted what was put out by ENVY in the draft response to the NRC, and we looked into only a few aspects of some of those programs. So this was not our NSA evaluation of the health of each of those programs and then the tables were not our opinion of those [aging management] programs. It was a report out on ENVY's opinion.

Tr. 5/28/09 at 183-184 (DPS Panel). It is imperative that the Board not rely solely on NRC oversight of these aging management programs. First, NRC aging management review is limited in scope, and does not include a review of many plant systems and components that may pose reliability problems in the future.⁹ Second, the NRC has very specific radiological safety related concerns; however these may not be aligned with the states interest in ensuring reliable operation to protect ratepayers. For example, if one of the 39 aging management programs indicates that

⁹ NRC aging management review is limited to structures and components without moving parts, and specifically does not include “pumps (except casing), valves (except body), motors, diesel generators, air compressors, snubbers, the control rod drive, ventilation dampers, pressure transmitters, pressure indicators, water level indicators, switchgears, cooling fans, transistors, batteries, breakers, relays, switches, power inverters, circuit boards, battery chargers, and power supplies.” *See* 10 C.F.R. § 54.21.

an extended shutdown or downpowering of the plant is necessary to replace certain components relating to aging management (i.e. issues associated with embrittlement of CASS), the NRC would still find the plant safe as long as the issue was resolved.

While VT would also want any potential safety issues resolved, the possibility of an extended shutdown or downpowering due to aging management concerns is a reliability issue that affects Vermont utilities and ratepayers. So while NRC might ensure that a comprehensive aging management plan is in place by 2012, this does absolutely nothing to inform the Board of potential aging management reliability issues at this time, when a decision needs to be made regarding relicensing.¹⁰ The Board should therefore not be mollified by the Petitioner's arguments regarding NRC oversight, but rather should find that ENVY's failure to provide the Board with sufficient information regarding aging management indicates that they have not met their burden, and deny the Petitioner's request for a CPG.

The question therefore remains as to what else must be accomplished to ensure reliable operations for an additional twenty years; however it is clear that previous assessments, such as the detailed engineering inspection performed by NRC in 2004, did nothing to prevent subsequent calamities. There is little reason for the Board to be assured that the future does not hold more such failures. The Matrix containing the NSA recommendations is a start, and the Board must ensure that these items are remedied (and provide an opportunity for the parties to request hearings regarding ENVY's compliance), if a CPG is issued. However, even if these

¹⁰ Furthermore, NRC oversight is based on the Generic Aging Lessons Learned (GALL) report, which is a generic report that is not plant-specific. State oversight is needed, and as these programs were not reviewed by NSA, and will not be implemented until 2012, the Board cannot be assured that ENVY will have a comprehensive aging management program in place sufficient to assure VT that the plant can be operated reliably.

matters are somehow resolved by ENVY management (and NEC notes that Mr. Colomb stated ENVY would address the NSA recommendations, not implement them),¹¹ the past events at VY, as well as the pervasive nature of the shortcomings of ENVY's management, indicate that the Board cannot be assured that the VY station will be operated reliably for an additional twenty years. The Board must therefore deny the Petitioner's request for a CPG.

f. Spent Nuclear Fuel Management

ENVY states that continued operation of the VY station will require the storage of twenty additional casks on-site; however they maintain that this presents "no new or qualitatively different issues with respect to the safe, long-term storage of SNF..." ENVY Brief at 55. Twenty additional casks, however, would be 1/3 more than the 60 casks required from a 2012 shutdown. *See Id.* This represents quite a lot more SNF stored on-site. More importantly, twenty additional casks provides twenty additional opportunities for mistakes to occur during cask loading (such as crane failures – see Tr. 5/19/09 at 114 (Cloutier)), as well as twenty more terrorist targets sitting on the ground. So while qualitatively the issues regarding SNF management and storage may remain the same, the chances for mistakes, accidents and problems increase greatly if we allow more SNF storage at VY.

Furthermore, it remains unclear how long SNF will have to be stored on-site, and thus what the costs will be to maintain it. While ENVY argues that the Holtec system can last indefinitely, there is no real basis for this. ENVY Brief at 55. In fact, ENVY admits that the FSAR states that the Holtec system has only a 100 year life. *Id.* As no actual casks containing

¹¹ Entergy has made no commitment to implement all recommendations, and has stated that they will address the NSA recommendations; however some may not be implemented. Tr. 5/26/09 at 62-63 (Colomb).

SNF have ever been stored for longer than that, there is no reason to assume more than a 100 year life. The Board should be concerned that these casks may in fact remain in VT for many decades, and allowing more SNF to be generated will only prolong the costs and risks of SNF storage in our state. It makes no difference that ENVY has a preventative maintenance program for the casks. ENVY Brief at 56. What happens if ENVY (Entergy) or Enexus goes bankrupt? ENVY argues that the decommissioning fund may be protected in bankruptcy, ENVY Brief at 84-85, but if the fund is not adequate to cover the costs of decommissioning, site restoration and SNF management, Vermont may be left with the bill. Twenty additional casks only increase the expense of storage and the timeframe for removal, thus increasing the potential for costs to VT.

ENVY also claims that “Continued Operation will not significantly increase radiological contamination at the site.” ENVY Brief at 40. This is a very misleading statement, and contradicts Mr. Thayer’s testimony that the actual amount of contaminated soils at VY cannot be determined until decommissioning commences. Tr. 5/20/09 at 213 (Thayer). It also seems to ignore the potential for any accidents at VY in the future. Twenty more years of operation would include more transfer of SNF to casks, more long-term storage of low level radioactive waste, and more opportunities for mistakes or leaks that may cause radiological contamination at VY. Of course the future is unknown, but ENVY’s track record suggests that Vermont can expect several oversights and equipment failures at VY over the extended license period, with the potential for additional radiological contamination.

Entergy has also opposed the conditions recommended by WRC and DPS regarding the management of SNF at VY. NEC agrees with that these conditions should be imposed if a CPG is issued, and assumes that WRC and DPS will respond accordingly; however there are a few points that NEC would like to add.

First, ENVY opposes the WRC proposal to site the second ISFSI as part of this docket. ENVY Brief at 58. They admit that ENVY's updated Spent Fuel Management Plan contemplates the construction of a second ISFSI, however they make the extraordinary claim that "Entergy VY is not, however, seeking approval for construction of a second pad in connection in (sic) this proceeding...." ENVY Brief at 59. This is patently absurd. The caption for the docket even states that the Petitioner is seeking a CPG in part for the "storage of spent-nuclear fuel." They are further seeking to generate twenty more years of SNF which needs to be stored on-site for the foreseeable future. It is therefore clearly within the Board's purview at this time to determine where exactly that SNF will be stored, and in VT's interests to site the second ISFSI now, rather than putting it off for another generation of Vermonters to have to deal with.

Next, ENVY opposes the DPS recommendation that the Board require ENVY to maintain full core offload capability. ENVY Brief at 59. ENVY claims that this capability has never been necessary, however that does not mean that it will absolutely not be necessary in the future. More importantly, ENVY argues that the Board must not insert itself into the operation of VY, or micromanage the plant. *Id.* at 60-61. They cite to a statement made by Chairman Volz, wherein he suggests that the Board does not want to "sit in place of the managers of the company." *Id.* at 61. Mr. Volz, however, offered a further statement about the potential for including a requirement that ENVY maintain full core offload capability:

The reverse of that, though, is the concern I have which is that you decide -- we don't have that condition in place and you decide to go ahead and take the chance that you're not going to need the room. Something bad happens that causes you to need to be able to empty the core so you can make a repair, and you're not able to do that and you have to wait a much longer period of time to make that fix. Meanwhile you're offline and we're -- and we're -- we have -- and if the sharing agreement was in place and was operating at that point, then we would be losing

out because of your business decision.... without a condition then we have no -- you can tell us why you're doing it, but we have no ability to say don't do that.

Tr. 5/21/09 at 100-102. Mr. Jansen added that ENVY could seek a waiver of the condition, and if there was a reasonable justification for not maintaining full core offload, there is no reason the Board would not grant the waiver. *Id.* at 103-104. This appears to be the best option to protect Vermont's interests.

Finally, ENVY maintains that they should not be forced to reduce the number and density of the spent fuel assemblies in the spent fuel pool. They claim that spent fuel pool density is a safety issue preempted by NRC authority, and that "there is no evidence in the record that the issue of spent-fuel-pool density is related to reliability...." ENVY Brief at 62. This argument is completely without merit. A spent fuel pool fire would require that the plant shut down for extensive repairs, and may necessitate closure of VY. This would have an obvious affect on reliability. Furthermore, Mr. Thayer made clear that safety and reliability are totally intertwined, stating that:

I know your colleague, Attorney Hofmann, has talked about the strong nexus between reliability and safety. And in operations of a nuclear plant and I operated -- I was in charge of the operation of Vermont Yankee for five years, there is -- we make no distinction in our operating budgets, in our capital budgets, between safety and reliability. Because if the facility isn't operating safely, it's not a good facility. If the facility isn't operating reliably, it's of no value to us. So this nexus between reliability and safety, to operate the facility safely and in so doing, create a reliable facility, that is a true asset to the company, that's all -- that's inextricable from itself. In other words, you can't parse and say this is reliability, this is safety, this is important, this is not important. It's operating the facility is an -- it's a holistic picture which contains safety elements, it contains reliability elements, it contains public health elements, and as an owner/operator, as a licensee, you've got to satisfy all of those.

Tr. 5/20/09 at 113-114 (Thayer) (emphasis added). Additionally, Mr. Thayer specifically agreed with Mr. Jansen that there are reliability and potentially economic implications of the density of the fuel in the spent fuel pool. Tr. 5/21/09 at 86 (Thayer). For ENVY to now claim that there are no non-radiological issues regarding the potential for spent fuel pool fires is disingenuous. The Board should not accept ENVY's argument, and should implement the recommendations made by the parties regarding spent fuel management should a CPG be issued.

Since briefs were filed in this Docket, it has been revealed that ENVY has not complied with conditions agreed to with DPS (within the DFS MOU) regarding dry cask storage, approved by the Board in Docket 7082. Specifically, ENVY has not submitted periodic reporting of cask radiological and thermal monitoring. *See* Entergy Letter to the Board, dated July 30, 2009. This indicates that ENVY cannot be relied on to consistently keep its commitments regarding SNF management, even with the issue of relicensing pending before the Board. Therefore ENVY cannot be relied on to keep its commitments when it no longer anticipates the necessity of appearing before the Board. This oversight exemplifies the failures of management at VY, and is a further indication that this Board should find that relicensing VY is not in Vermont's best interests.

g. Decommissioning Costs

The Board is being asked to rely on a decommissioning cost estimate provided by TLG. While the subject of TLG's ownership was mentioned in the testimony, none of the parties discussed it in their Brief's; however it bears mentioning. TLG is a wholly-owned subsidiary of

Entergy Nuclear, Inc., which means it is owned by the same company that owns VY.¹² Cloutier Mar. 3 Pf. at 2. Entergy makes money from the operation of VY, and it is in Entergy's interests to continue to operate VY, as well as to pay as little as possible into the decommissioning trust fund. It is therefore in Entergy's interest to have the decommissioning cost analysis be as low as possible. As TLG is owned by Entergy, there is an obvious conflict of interest, which the Board must consider when scrutinizing the information provided by the Petitioner.

Perhaps this is why ENVY states that "the most recent pronouncements by the DOE indicate that the date of 2020 remains a reasonable date for purposes of preparing decommissioning-cost estimates." ENVY Brief at 68 (citing TLG witness Cloutier - Tr. 5/18/09 at 202). This contradicts the testimony of other ENVY witnesses, who claimed that DOE is not expected to be able to remove fuel until the 2050-2060 timeframe. Lester Feb. 11 Pf. Reb. at 10; Tr. 5/18/09 at 14-16 (Lester) (confirming 2050-2060 timeframe).

This difference of potentially 40 years of SNF management renders the TLG cost estimate absolutely inadequate. Mr. Cloutier even testified that the most significant cost driver in the various scenarios presented by TLG for decommissioning costs is the cost to manage and store SNF. Cloutier Mar. 23 Reb. Pf. at 8. It is therefore absurd for ENVY to claim that TLG's assumptions are "reasonable and conservative given present knowledge." ENVY Brief at 69.

¹² This may be an oversimplification of the corporate structure, however as we saw in Mr. Thayer's testimony the corporate web that Entergy has woven is hard to understand; however it is clear that both VY and TLG are part of the Entergy corporate family, and therefore owned by the same parent company.

The Board must find that the Petitioner has not met their burden, and require ENVY to provide an updated decommissioning cost estimate,¹³ or deny the Petitioner's request for a CPG.

Additionally, ENVY claims that "the Board should not require cash payments into the Decommissioning –Trust Fund when the only issue remaining for adjudication before the Court of Federal Claims is the amount of damages the DOE must pay to Entergy VY...." ENVY Brief at 74. ENVY, however, has made no promise to put any money received from the DOE litigation into the decommissioning trust fund. Tr. 5/20/09 at 108 (Thayer). There is thus no reason to believe that any money recouped from DOE will be available for future decommissioning or SNF management costs, and it would be imprudent for the Board to rely on these damages when considering cash payments by Entergy to remedy existing shortfalls in the fund.

h. Environmental Criteria Under § 248(b)(5)

ENVY's discussion of the affects of continued operation on the environmental criteria of § 248(b)(5) is wholly inadequate, and substantiates the claims made in NEC's Initial Brief that they have not met their burden in this case.

i. Air and Water Quality

Regarding air quality, ENVY maintains that ANR witnesses testified that the biocides used as cooling-water-treatment additives are consumed before reaching the cooling towers. ENVY Brief at 94. This is not correct, and Mr. Garabedian actually testified that ANR estimates

¹³ The updated cost analysis must take into account remediation to the 10 millirem level as proposed by DPS, more realistic dates for SNF removal by DOE, Entergy's promise not to use rubbleization, and must consider the actual costs to decommission other nuclear power plants in the region. See NEC Initial Brief at 31-36.

that as much as 4 lbs per year of biocide is emitted in cooling tower drift,¹⁴ and further that the effects of these emissions are not monitored by ANR. Tr. 6/1/09 at 182-183 (Garabedian).

ENVY has provided no additional information on these emissions.

Furthermore, as set forth in NEC's Initial Brief, Mr. Garabedian only testified that "with regard to air pollution regulated under state and federal Clean Air laws; this faculty (sic) will not create undue air pollution." Garabedian Feb. 11 Pf. at 3. There are several sources of air pollution not regulated under state and federal Clean Air laws, including emissions from vehicles of employees, welding and heavy machinery. Tr. 6/1/09 at 185-186 (Garabedian). ENVY has provided no information indicating that these additional sources of air pollution will not have an undue adverse affect on air quality. They have therefore failed to meet their burden regarding air quality.

Regarding water quality, ENVY maintains that there is a rebuttable presumption of compliance with applicable environmental criteria under § 248 because they have existing permits issued by ANR. *Id.* at 95. They further state that "ANR's witnesses all testified that Continued Operation will meet applicable environmental criteria under Section 248(b)(5)." *Id.* This statement defies logic. Mr. Kooiker made it clear that the VY Station is operating on a NPDES permit that expired over three years ago, and which will be replaced soon by a new permit. Tr. 6/2/09 at 15 (Kooiker). ANR, however, cannot be sure if the new permit will be substantially the same as the existing permit, due to potential changes in EPA regulations pursuant to which ANR will reissue the NPDES permit. *Id.* It is therefore impossible to say that

¹⁴ The amount of biocide emissions is not measured directly by ANR, and could be much more than 4 lbs per year. The Petitioner and ANR have not supplied any concrete information suggesting how much is actually emitted, so the Board cannot be sure of the amount or potential negative effects of biocide emissions in cooling tower drift.

the current operation of VY will be within the parameters of the new NPDES permit. The Board cannot find that there is a rebuttable presumption of compliance when the pending permit has yet to be reissued.

Amazingly, ENVY provides only one paragraph on the issue of water quality, and completely fails to even address some significant issues brought forth during the hearings. Specifically, ENVY makes no mention of wetlands, and the potential effects of continued operation on wetlands on the property and in the vicinity of VY. As is discussed further in NEC's initial Brief, ANR witness Mr. Quackenbush testified that there are jurisdictional (Class II) wetlands both on the non-operational portion of the VY property, as well as along the Connecticut River on the vicinity of the station. He further testified that certain biocides are emitted from the cooling tower drift, which may settle in these wetlands. Tr. 6/2/09 at 30-31 (Quackenbush). ANR, however, does not monitor any of these wetlands for potential adverse affects from these chemicals. *Id.* ENVY has failed to address this issue, and therefore has not met there burden to show that twenty more years of biocide accumulation in the wetlands surrounding VY will not have an undue adverse affect.

ii. Transportation Systems [10 V.S.A. § 6086(a)(5)] and Educational Services [10 V.S.A. §§ 6086(a)(6) &(7)].

It is significant that ENVY chose not to address issues relating to education or transportation resources at all in their Brief. The total failure to even discuss education or transportation resources indicates that ENVY is ignoring these issues, perhaps because they have no valid response for the obvious fact that the analysis provided by their experts was based on erroneous information – specifically that ENVY was not going to be hiring additional employees, when in fact Mr. Thayer testified that 60 additional employees would be hired this

year. Thayer Mar. 3 pf. at 4. The Board was provided with no information in pre-file testimony, during the hearings or in the Petitioner's Brief regarding the potential effects these additional employees may have on transportation and educational resources. The Petitioner has therefore not met their burden.

In sum, the Board is left with only two ways of looking at this complete failure; either ENVY is ignoring these issues because it has something to hide, or else they have simply neglected to discuss applicable statutory criteria and have therefore not met their burden under § 248. In either case, the total failure to discuss these important issues requires denial of the CPG.

iii. Aesthetics

ENVY contends that the relicensing of VY will not have an undue aesthetic affect on the region's landscape since it has been in place for forty years, and that it was designed to reduce aesthetic impacts. ENVY Brief at 95-97. They further claim that if the VY facility is not relicensed, it will be put in SAFESTOR, and therefore the only immediate aesthetic impact would be the absence of the vapor plume from the cooling towers, which they claim would be a minimal benefit due to screening in the summer months. *Id.* at 96. This completely discounts the huge aesthetic impact the plume has on the region. ENVY witness Mr. Dodson testified that the plume can reach 1,000 feet in the summer months. Tr. 5/18/09 at 132 (Dodson). A 1,000' plume creates more of an aesthetic impact than a mere "distant industrial facility," as the Petitioner's characterize VY. ENVY Brief at 96.

Furthermore, Mr. Dodson admitted that no surveys or interviews have been conducted with area residents to determine their perception of the impact the plume has on the aesthetics of the region. Tr. 5/18/09 at 134 (Dodson). Therefore, it is not clear whether the average person living in the region considers the plume to be "shocking and offensive" pursuant to the *Quechee*

analysis. Moreover, for the past 40 years the plant has operated on a license set to expire in March of 2012. The “average person” in the region of VY might reasonably have believed for decades now that they would only have to put up with the aesthetic impacts of VY until that time. It may therefore be “shocking and offensive” that an additional twenty years of operation and aesthetic impacts may now be allowed. This indicates that the continued operation of VY might have an undue adverse affect on aesthetics pursuant to the *Quechee* analysis, and the Petitioner has failed to adequately address these issues in their testimony and Brief.

5. Conclusion

For the reasons discussed herein, and in NEC’s Initial Brief, the Board should adopt the findings, conclusions and conditions proposed by NEC, and should reject any contrary findings and conclusions proposed by other parties. The Board should therefore deny the Petitioner’s request for a CPG.

Dated at Jericho, Vermont this 7th day of August, 2009.

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